

Abstract

The abstract is a 250-words-or-less summary of your manuscript. It is the second page of your manuscript, after the title page. In addition to being the summary of your paper, it is also distinctive because there is *no indent on the first line*. You just start writing flush-left against the left margin, with no tab. It is double-spaced, just like the rest of your manuscript, and it has the heading “Abstract”, in bold, at the top of the page. Before you sit down to write your abstract, I recommend that you read about five abstracts from published articles. There is a kind of rhythm or pattern to abstracts that you pick up after you read several, and it can help you to write your own. There is no formula for writing the abstract, but I've developed the following framework that may be a useful place to start:

1. The beginning should describe the central purpose of your study: “This study was designed to examine the effects of food on self-esteem.” That framework of “the effects of X on Y” would only work if you are doing an experiment. If you are doing a correlational study, you would need to rephrase that in terms of “the relationship between X and Y”.
2. Briefly describe the procedure, ideally adding number of participants: “Participants ($N = 20$) completed a self-esteem questionnaire, were randomly assigned to eat either bugs or chocolate, and completed the self-esteem questionnaire again.”
3. Give the central results, providing p -values and/or correlation coefficients (r), but not other test statistics (e.g., t , F): “Participants who ate bugs experienced a significant decrease in self-esteem ($p = .04$), but participants who ate chocolate experienced a significant increase ($p = .003$).
4. If possible, finish with a statement about the implications of your findings or suggestions for future researchers.

Introduction

The introduction comes after the abstract, and starts on its own page. The heading for the introduction is *the title of your paper*, in bold, and centered at the top of the page. The heading is *not* the word “Introduction.”

Number One Goal: Accessibility

With a few exceptions, the imagined audience for your introduction should be a first-year college student. Your goal is accessibility: You want to share your findings with anyone who is interested. Do not assume that your audience is familiar with psychological theory or methodology. Instead, educate your reader on any specialized topics that you suspect she may be unfamiliar with. Use specialized terms (e.g., “cognitive dissonance”) only after you have defined them. Be clear. A common error among beginning writers is to state a point and assume that their job is done. Although you should strive to be concise, even more important is to be understood. Do not be afraid to elaborate and use examples to illustrate a point. Be a teacher. Finally, make your introduction interesting: Convince your reader that what you are studying is worth knowing.

How to Begin

Your introduction should be like a funnel: broad and general at the beginning, gradually narrowing down to your hypothesis. How broad should the beginning be? Aim for a *combination* of as many of your key variables as possible. For example, if your paper is about gender differences in walking alone versus in groups, do not begin your introduction with statements about walking in general (e.g., “Since the beginning of human history, people have walked.”), and do not begin with statements about gender in general (e.g., “Men and women are different in many ways.”). Those statements waste the readers' time. Instead, begin with the combination of those two key variables, perhaps with a little context tossed in for spice: “A curious gender difference in the U.S. is the tendency for women to travel together to the restroom while men tend to travel to the restroom individually.”

Below is an example of what I consider a good first paragraph, from Reeder (1997):

When we judge other peoples' abilities—whether it be in sports, business, or education—we usually consider more than just the level of performance that was achieved. If a failure occurred, for example, we often suspect that extenuating circumstances were involved. A sub-par golf stroke could be the result of a sprained wrist, or a low test score could be the result of a transient family problem. In other words, we are prepared to employ Kelley's (1973) *discounting principle* when making attributions for low performance: Judgments of a person's ability will be shifted in an upward direction if situational factors are believed to have impaired his or her performance.

Note how Reeder starts the introduction with a statement about the phenomenon of central interest: judging people's abilities. He offers examples that many people can identify with and uses them to illustrate the point that judging ability from performance is not straightforward; we often consider other information when making that judgment. He introduces a technical term – the discounting principle – but is careful to define it.

Some research topics may require a great deal of context before they can be clearly stated to an audience unfamiliar with the area. Even with a very complex topic, however, the author should strive to provide the reader with a clear sense of the central research *topic* (not hypothesis) by the end of the third paragraph. Otherwise, the reader may decide that the cost of time wasted reading an irrelevant article is greater than the possible benefit, and they will put down your article and look elsewhere.

Your “Research Goal”: Hypothesis Testing or Exploration

If your review of the literature and your thinking about your research question lead you to a clear prediction, then you should state a hypothesis. However, it is sometimes the case that you are not sure what you expect to find. For example, you may be comparing several possible predictors of first-year GPA and you're not sure which one will be the best. In that case, your research is “exploratory” and you will not have a hypothesis: “Our goal was to determine which of our predictors would best predict first-year GPA.”

If you do state a hypothesis, *do not put it at the beginning of the introduction* because it tends to produce an introduction that sounds like it is trying to justify the capricious whims of the authors. To avoid this, I recommend beginning with your research *topic* and gradually assembling the evidence that leads your reader to your *hypothesis*: “Do women and men differ in their tendency to travel in groups?” gradually leads up to “We expect that women will travel in groups more frequently than men.”

Building Your Case

Imagine yourself as a prosecutor who is telling the jury a story, placing every piece of evidence into its proper place. Your mission is to create an unbroken chain of logic and evidence that leads to your research goal: either testing a hypothesis or exploring a question. When your audience gets to your research goal, which should be close to the end of your introduction, they should think “Of course! That's exactly what it should be!” Your research goal should not appear to fall out of the blue sky but should instead appear to emerge naturally from the logic and evidence that you present.

An essential part of building your case is *using the scientific literature in psychology*. Has your research question been investigated before? If yes, then you should provide some history of previous research. Make it clear how your own study is both similar to and distinct from those previous studies. If your research question is unaddressed, it is likely that research has already been done on both your independent variable and your dependent variable in separate contexts. Review that literature and see if it offers clues to how those two variables might be related. As you discuss previous research in your introduction, stay focused on your own research question. Unless you are writing a literature review article, you cannot afford to provide an exhaustive summary of the research in an area. Instead, provide just enough information to improve the reader's understanding of your research goal.

In organizing your review of the relevant literature, try to write one paragraph per *idea* rather than one paragraph per *article*. If you can, cite several studies in the same paragraph. You can even cite multiple studies that all make the same point and not even talk about how they are different:

“Individuals who are faced with a unanimous majority often change their behavior to fit in with the majority (Asch, 1956; Deutsch & Gerard, 1955).” Note that you should refer to articles not by their titles but instead by their authors and publication dates.

What needs to be cited? Any statement of fact that could reasonably be disputed should be supported by some kind of evidence, and the language you use should reflect how strong that evidence is. For example, if there is only one study supporting your point, then you should not make it sound as if it is accepted scientific opinion. If you cannot find empirical support for a point that you would like to make, then you should phrase that point in tentative language: “One way that resisting temptation *may* lead to attitude change is...”

How much detail about an article do you need to give? Give enough detail to support the point you are making, and be sure not to omit important details that might weaken your case. For example, if you find a study whose findings are in line with your predictions, but the subjects were squirrels, that difference would be worth mentioning. Avoid mentioning trivial details from the studies, such as number of participants, unless those details are important to the point you are making.

A final word of advice regarding the organization of the introduction is to pay attention to the *order* of your paragraphs. Look at each paragraph and ask, “Is this the best place for it? Would the paper be better if this came earlier, or later?” Remember that a paragraph should be about a single point or idea. This point should be made in the first sentence of the paragraph, and the rest of the paragraph should support it. If you make the same point in several different paragraphs, think about consolidating those into a single paragraph. Lastly, look for opportunities to write *transitions* between paragraphs: try to write the concluding sentence of each paragraph so that it points toward the next paragraph. If a particular transition seems difficult to write, it may indicate that you need to re-arrange the order of the paragraphs.

Research Goal and Method Overview

The last two sections of your introduction are a clear statement of your research goal and an overview of your method. A hypothesis is the pattern of results that you expect. You may phrase it in the first person: “We hypothesized that the presence of an audience will lead to higher performance when the task is well-learned. When the task is new or difficult, however, the presence of an audience will decrease performance.” As mentioned above, your research goal should not come as a surprise but should instead be well-supported from the research and logical argument that comes before it. After presenting the research goal, provide a one-paragraph overview of the method that you used to pursue your research goal: “To test this hypothesis, subjects were timed while they buttoned a dress shirt. Half the subjects performed the task in front of an audience and half performed it alone. In addition, subjects in the well-learned condition wore the shirt with the buttons in the front, while subjects in the difficult condition wore the shirt with the buttons in the back.” Note that the overview omits many important details. The overview has two functions: 1) it is a transition to the Method section, which comes next, and 2) it should permit a reader to skip over the Method and Results sections and go directly to the Discussion section.